# Met Office 3-month Outlook

Period: October–December 2017  Issue date: 28.09.17

The forecast presented here is for October and the average of the October-November-December period for the United Kingdom as a whole. The forecast for October will be superseded by the long-range information on the public weather forecast web page (www.metoffice.gov.uk/public/weather/forecast/#?tab=regionalForecast), starting from 6 October 2017.

This forecast is based on information from observations, several numerical prediction systems and expert judgement.

**SUMMARY – TEMPERATURE:**

For October and October-November-December above-average temperatures are more probable than below-average temperatures.

Overall, the probability that the UK-average temperature for October-November-December will fall into the coldest of our five categories is between 10% and 15% and the probability that it will fall into the warmest of our five categories is between 35% and 40% (the 1981-2010 probability for each of these categories is 20%).

**CONTEXT:**

The tropical Pacific Ocean is currently in a neutral El Niño-Southern Oscillation (ENSO) state. There is, however, increasing evidence to suggest a La Niña event will develop; sea surface temperatures in the tropical Central and Eastern Pacific are cooling and long-range forecasting systems indicate this cooling could continue in the coming weeks and months. La Niña would slightly increase the chance of blocking patterns over the North Atlantic and Europe in the outlook period, leading to greater chances of colder-than-average conditions.

The Quasi-Biennial Oscillation (QBO), an oscillation of the equatorial winds in the stratosphere, is in an easterly phase. The QBO is linked to conditions over Western Europe during late autumn and early winter through an influence on the phase of the North Atlantic Oscillation (NAO) at the surface. An easterly phase of the QBO tends to moderately increase the chances of a negative phase of the NAO, which in turn increases the chances of below-average temperatures.

Arctic sea ice reached its annual minimum extent in September. Sea ice extent will be well below its long-term average throughout the outlook period, although the overall deficit is not quite as large as last year. Recent research has suggested that a lack of Arctic sea ice in autumn increases the probability of high-pressure patterns over Northern Eurasia. This could result in low pressure near the UK and an increased chance of above-average temperatures.

Sea surface temperatures in the North Atlantic are generally above average, consistent with the current high levels of warmth globally. Southwest of the UK, however, temperatures are below average, which increases the chances of below-average temperatures in the early part of the outlook period. Nevertheless, warmth beneath the ocean surface, which is expected to have an increasing influence on surface conditions as the period progresses, favours higher-than-normal temperatures for the time of year.

For October, and October-November-December as a whole, seasonal prediction systems show moderately good agreement on increased chances of westerly or cyclonic weather patterns for the UK. Despite this, there are differences between the systems' predictions, which is unsurprising given the conflicting signals from the drivers discussed above. Some systems suggest an increased likelihood of high-pressure patterns over the North Atlantic which would imply greater likelihood of north-westerly winds and below-average temperatures. Overall, however, there are increased chances of above-average temperatures over the outlook period (see figure T2). This is a result of the higher-than-usual likelihood of mild westerly winds and the background warmth that has been associated with above-average UK temperatures throughout much of 2017 (see figure T1).

Fig T1

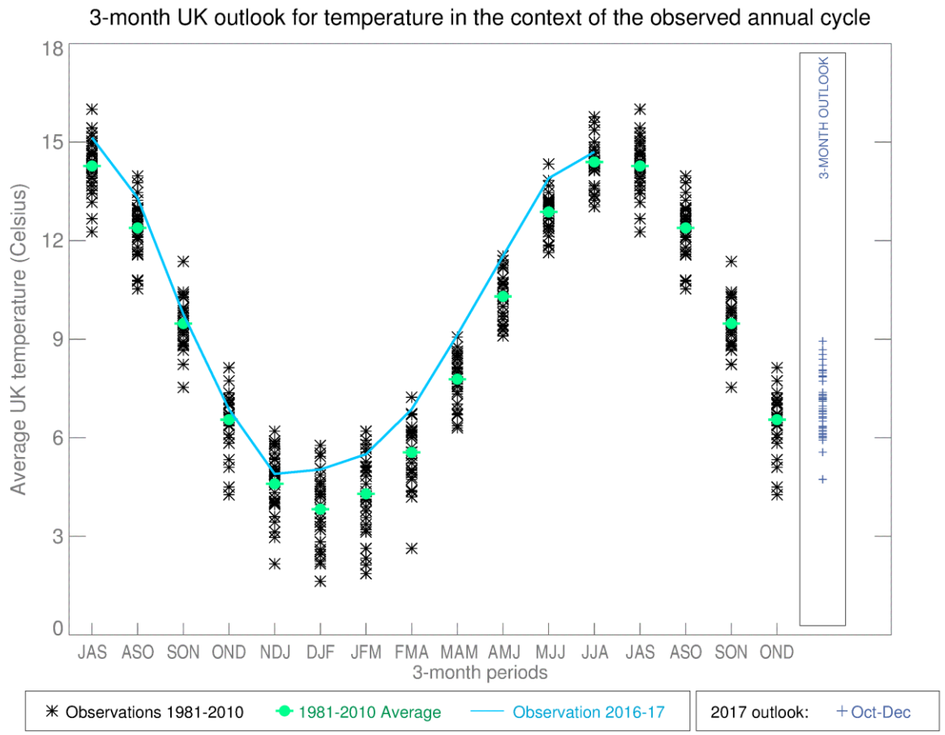



Fig T2

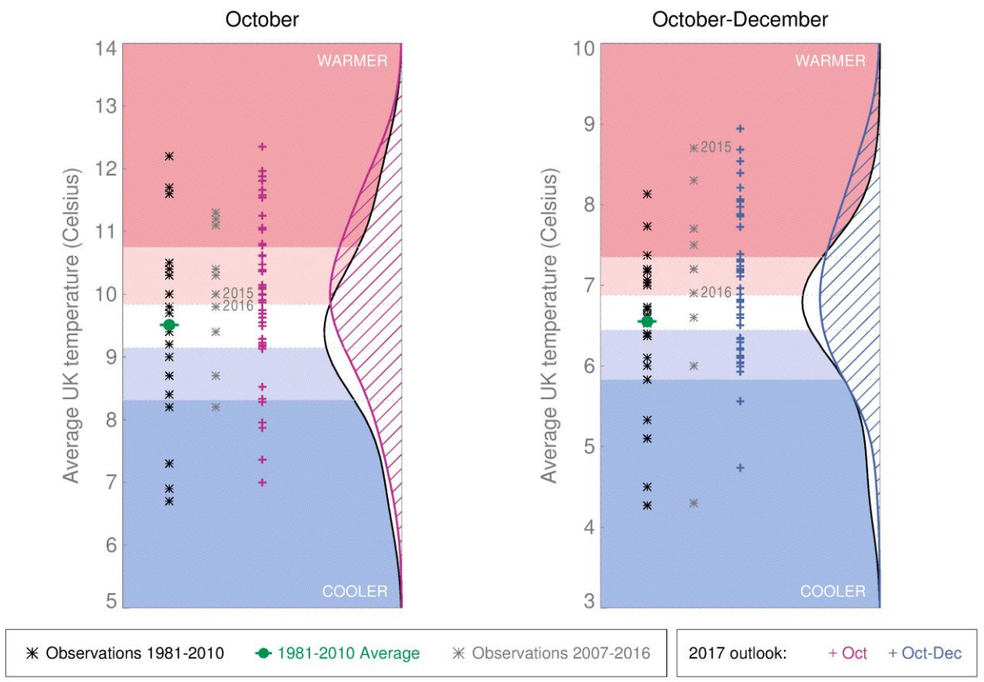
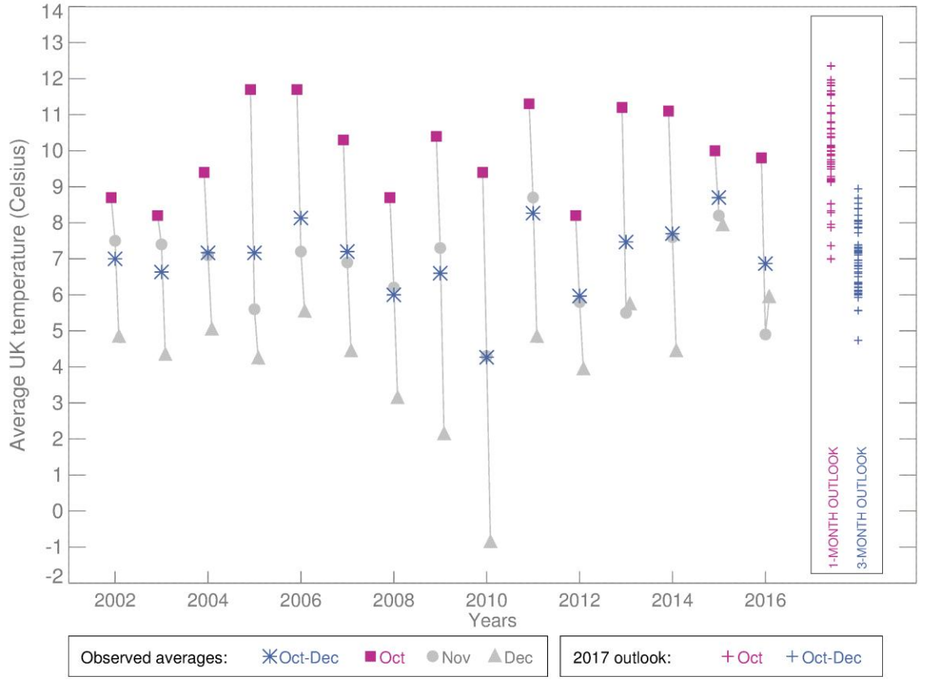



Fig T3




This Outlook provides an indication of possible temperature and rainfall conditions over the next 3 months. It is part of a suite of forecasts designed for contingency planners.

The Outlook should not be used in isolation but should be used with shorter-range and more detailed (30-day, 15-day and 1-to-5-day) forecasts and warnings available to the contingency planning community from the Met Office.